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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,854	12/04/2003	Craig Andrews	LYNN/0161	7862
24945	7590	02/03/2009		
STREETS & STEELE 13831 NORTHWEST FREEWAY SUITE 355 HOUSTON, TX 77040			EXAMINER WILLS, MONIQUE M	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 02/03/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/727,854	Applicant(s) ANDREWS ET AL.	
	Examiner Monique M. Wills	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-85 is/are pending in the application.
- 4a) Of the above claim(s) 77-85 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This Office Action is responsive to the Amendment filed September 11, 2008. Claims 1-10, 14-16, 21-33, 38-39, 47-50, 52-63 & 68-69 are rejected under 35 U.S.C. 102(e) as being anticipated by Cisar et al. U.S. Pat. 2003/0003343 is overcome. Claims 11-13, 40-46, 51 & 70-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cisar et al. U.S. Pat. 2003/0003343 in view of Ren et al. U.S. Pat. 6,986,961 is maintained. Claims 17-20, 34-37 & 64-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cisar et al. U.S. Pat. 2003/0003343 in view of Malikayil U.S. Pat. 5,993,494 is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 14-16, 21-33, 38-39, 47-50, 52-63 & 68-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cisar et al. U.S. Pat. 2003/0003343.

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Cisar teaches a bipolar comprising: a fluid barrier circumscribed by sealing frames (pars. 30-31). The limitation with respect to the frame being formed by injecting a polymer into a mold overlapping the perimeter of the fluid barrier has been considered, but has not been given patentable weight. The limitation is a process limitation in product claim. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, the limitation is satisfied because the products are identical. See par. 30. The fluid barrier is metal (par. 62). The fluid barrier is a material selected from titanium and is plated with a metal (par. 62). The metal is gold, (par. 62). The first side of the fluid barrier has an anode flow field; a second side of the fluid barrier having a cathode flow field (par. 32). With respect to the anode flow field and the cathode flow field being attached to the fluid barrier before the sealing frame is formed around the perimeter, the limitation is satisfied as Cisar makes the same bipolar plate structure set forth by Applicant See par. 62. The limitations of claims 7-8 are process limitations, and although the limitations have been considered they do not impart patentability so long as the resulting structure is the same. In the instant case, the bipolar plate of Cisar is identical to Applicants. With respect to chemically etching the fluid barrier, the limitation is a process limitation in a product claim. Although the

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limitations have been considered they do not impart patentability so long as the resulting structure is the same. In the instant case, the bipolar plate of Cisar is identical to Applicants. The anode flow field and the cathode flow field are formed from a material selected from expanded metal mesh (Par. 17). . With respect to the polymer being thermoplastic, it is reasonable to expect the polymer to be thermoplastic as the polymer maintains structural integrity in high temperature fuel cell environments. The polymer includes polyamides. See par. 35. The bipolar plat includes a gas barrier, cathode sealing frame and anode sealing frame. See par. 30. The bipolar plate includes a cooling frame adapted to receive a perimeter of the cathode side of the anode fluid barrier and a perimeter of the anode side of the cathode fluid barrier, wherein an anode side of the cooling frame is bonded to the anode frame to form a fluid seal and the cathode side of the cooling frame is bonded to the cathode frame to form a fluid seal. See par. 35 and Figure 4.

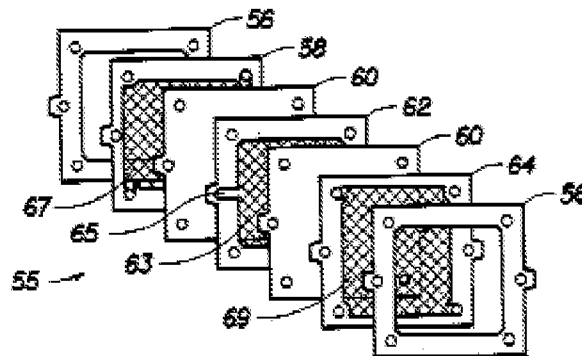


FIG. 4

The cooling flow fields are attached to the anode and cathode fluid barriers. See Figure 4 and par. 31 & 32.

Although sealing frames circumscribe the fluid barrier or Cisar, the reference does not expressly disclose that the barrier is surrounded by an individual sealing frame adjacent the parameter.

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ frames around the fluid barrier of Cisar, in order to improve sealing ability of the fluid barrier. Cisar expressly uses of sealing frames around the flow fields as illustrated in Figure 4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-13, 40-46, 51 & 70-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cisar et al. U.S. Pat. 2003/0003343 in view of Ren et al. U.S. Pat. 6,986,961.

Cisar teaches a bipolar comprising: a fluid barrier; a sealing frame formed around a perimeter of the fluid barrier (par. 30). A gasket is provided to seal surface between the cathode sealing frame and anode sealing frame. Par. 30. The limitation with respect to the gasket being applied by print screening is a process limitation in a product claim. The limitation has been considered, but has not been given patentable weight. "[E]ven though product-by-process claims are limited by and defined by the

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process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, the limitation is satisfied because the products are identical. The sealing plates include alignment holes. See Figure 4

However, Cisar does not expressly disclose: a first gasket sealing the frame to the membrane electrode assembly, a second gasket to provide sealing of second side of sealing from to a second membrane electrode assembly.

Ren teaches that it is well known in the art to employ gasket to seal sealing frames to the membrane electrode assembly. See column 4, lines 55-68.

Cisar and Ren are analogous art from the same field of endeavor, namely fabricated membrane electrode assemblies with sealing frames and gaskets.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to seal the sealing frames of Cisar to the membrane electrode assemblies as taught by Ren in order to improve sealing and obviate leakage.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-20, 34-37 & 64-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cisar et al. U.S. Pat. 2003/0003343 in view of Malikayil U.S. Pat. 5,993,494.

Cisar teaches a bipolar plate as described hereinabove.

The reference does not expressly disclose a polymer frame mixed with a filler, wherein the filler modifies the performance of the polymer.

Malikayil teaches that it is well known in the art to employ fillers in plastic frames, in order to provide stiffness and enhance mechanical properties. See column 3, lines 65-68.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the filler materials of Malikayil in the fuel cell frames of Cisar, in order to provide stiffness and enhance mechanical properties.

Response to Arguments

Applicant's arguments with respect to Cisar not expressly teaching a sealing frame around the fluid barrier is correct. However, Cisar widely teaches the use of sealing frames to control fluid flow, so it would be reasonable to employ the frame around the fluid barrier to improve sealing ability of said barrier. Therefore, Cisar has been newly applied as recited above.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Monique M Wills/
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795